

The FAA Airport Safety Newsletter

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Thought for this Issue

The Safety and Operations Division has published the revision to the Advisory Circular (AC) 150/5370—2 *Operational Safety on Airports During Construction*. In particular, it contains guidance for airport owners and operators concerning construction activities near runway edges and at runway ends. It is *must* reading. The latest revision is now 2E.

PLUS! Innovative lighting aids for identifying construction areas. LEDs pave the way for brighter, more conspicuous lighting of construction locations. Photos courtesy of Carmanah, Inc.

AIRPORT SAFETY DURING CONSTRUCTION

The construction season is underway in earnest (now that incessant rain has stopped on the east coast), and airport operators should consult the new Advisory Circular (AC) that establishes

guidance for maintaining airport safety during construction. During recent years, several mishaps involving airport construction activities occurred at major airports, with the loss of lives and the destruction of valuable property. Investigations of these events showed that airport operators must pay close attention to the situations that are created when there is construction on the airport. Even in optimal conditions, *i.e.*, daylight, clear, good visibility, and the absence of haze, precipitation, or fog, the risk for a mishap exists. That risk is increased when traffic routing on the airport is disrupted. The risk is further increased when poor weather or night conditions create visibility limitations.

Construction on the airport is inevitable. The extension of a runway, addition of a taxiway, or the creation of an entirely new configuration of an airport is occurring on many of the nation's facilities. Thus, preparation for these construction activities is essential. The Advisory Circular on *Operational Safety During Airport Construction*, AC 150/5370-2E is intended to provide airport operators with the guidelines necessary for maintaining safety during this very hectic and often disruptive time.

The AC first gives an overview of how an airport operator should approach safety needs during construction. This chapter reviews airport operator responsibilities and provides references for additional reading. Safety Plans are covered in the next chapter, with checklists and planning tools for safety and security, pedestrian and vehicle control, and notification and coordination requirements. This includes specific

guidance on notification procedures to users and the requirement for coordination with appropriate FAA offices as well as the airport's Aircraft Rescue and Fire Fighting unit. Following this is planning information on measures that should be taken to assure the safety and security of construction personnel.

Chapter Three covers safety standards and guidelines. Included in this chapter are sections specific to safety areas for both runways and taxiways, a section on displaced thresholds, and a section on construction marking and lighting. Chapter Three also addresses lighting and marking guidelines for displacements. In the last section of the Chapter, marking and lighting procedures for a variety of conditions are presented, everything from hazard marking, trenches and excavations, and FOD management.

Several appendices provide additional guidance and suggest related reading materials. A safety-planning guide is also included.

LEDs Light Up The Place

FAA recently looked at LED equipment to identify construction areas and as a means of alerting pilots and other operators on the airport about the location of potential hazards. Several airports have decided that the conspicuity and lighting-life features of solar-powered LEDs are technology's newest contribution to the need for equipment that is economical and effective. Electric bills for lighting obstructions and hazards can prove expensive. Battery-powered lights either fail or do not provide light bright enough to identify hazards adequately. LEDs are bright, install quickly, have low or no maintenance, and are completely self-contained. The lighting of construction hazards is especially important in

adverse weather conditions, and LEDs are all-weather operative. O'Hare and Seattle airports are currently using LEDs to identify construction activity. The photo below was taken at O'Hare International Airport



Photo: Courtesy of Carmanah, Inc.

The rolling gate in this photo is but one example of the uses of LEDs to define barriers for pilots and other airport users.

Additional information can be found at:
<http://www.solarairportlights.com/>

Activities in the Runway Safety Area

Safety areas are for aircraft! Aircraft may or may not use them, and it is hoped that they won't. But aircraft are considered the primary potential users. Therefore, airport operators must be aware of their exposure to risk when they are working in safety areas. A lateral excursion by an aircraft that has a loss of directional control could result in the loss of life and/or property. In plain English, an aircraft landing short of the runway or going off the end of a runway is a threat to personnel working there.

FAA has been engaged in considerable discussion about personnel and equipment in the safety areas. The Airport Safety and Operations Division identified several factors that airport owners and operators should keep in mind when making decisions about mowing, snow removal, maintenance and repairs, and other activities in the safety areas at their airports. The first consideration is the regulation: 14 CFR part 139.309 (b) (4) expressly prohibits objects except those fixed by function in the safety areas. In addition, some misconceptions about activities in safety areas need to be addressed.

14 CFR part 139.309

Certificated airports (i.e., those regulated under 14 CFR part 139) are prohibited from having personnel or equipment in safety areas during an aircraft operation [139.309 (b) (4)]. The regulation allows only those items "fixed by function" in the safety area. FAA has undertaken an effort to relocate items "fixed by function" outside the safety area, to minimize the number of objects that can cause damage to wayward aircraft. This has resulted in a number of airports relocating localizers, various antennas, and other nav aids beyond or outside the safety area. Those nav aids that cannot be relocated from the safety area are what part 139 refers to as "fixed by function."

Since the mishap at Little Rock, AR, in which an air carrier landed long and went into the runway safety area, the National Transportation Safety Board (NTSB) has been looking carefully and critically at safety areas. Their recommendations have reinforced FAA's attention to part 139 requirements.

About Safety Areas

FAA has had to address several safety area issues. During the past few years, safety areas have been catalogued and evaluated to meet Congressional

directives. Within the past two years, FAA has collected information about the dimensions of the runway safety areas for the runways at all certificated airports and entered these data into a database. Secondly, a National Headquarters specialist reviewed the entries, and, as a result of this review, the FAA regions were encouraged to bring safety areas into conformance with the design standards *to the extent practicable*.

These are key words, because there are complications with many of the safety areas at the nation's airports. To the extent practicable, an airport's safety areas are to be maintained to the design standard and kept clear of items not fixed by function.

In addition, where an the acquisition of land or an *incremental* gain--no matter how small--will increase the size of a safety area, it should be pursued, *to the extent practicable*. The cost of land can be prohibitive, and this is a valid consideration. However, all the facts must be presented in a case to show how the runway safety areas were addressed.

Misconceptions About Safety Areas

At a towered airport, a "clearance" into the safety area is frequently required, as personnel and/or equipment cross or enter a *movement area* (under the control of ATC). However, ATC does not control the safety areas and has no responsibility for activities conducted in runway and taxiway safety areas. Safety areas are under the jurisdiction of the airport. This is an important *legal* point to remember.

Because of past practices, however, airport operators believed that an ATCT clearance into the safety area provided legal access and protection for activities involving personnel and equipment.

In some cases, ATCT *did* inform personnel when aircraft operations were occurring, and some arrangements were committed to letters of agreement (LOAs) or Memoranda of Understanding (MOUs). The legal aspect of such an LOA or MOU cannot be upheld, however, because part 139 specifically prohibits objects to be located in any safety area, except those fixed by function. No letter of agreement can bridge this gap between what the regulation requires and what two parties agree to. And, *legally*, the airport is responsible for any activity that occurs in the safety area. ATCT can *advise* the personnel in a safety area that an aircraft operation is imminent; this allows personnel to vacate the safety area while the aircraft operation takes place.

Airport Concerns

Airports have voiced concerns about accomplishing tasks in the safety areas, which they have normally conducted while aircraft operations were taking place. Now that the Office of Airports has issued reminders about the *legally enforceable* provisions of part 139 as well as the liabilities that can be incurred should an event occur involving personnel and/or equipment in the safety area, airports should keep this in mind as they develop procedures and methods for addressing routine maintenance activities.

There are some options available to airport operators to achieve compliance. For example, it may be feasible to use nighttime hours. Other arrangements may require gaining familiarity with peak traffic times, so that routine maintenance is performed when there is less arrival/departure activity.

Discussing these and other options with the ACSI can help solve most of these problems. Other airports have

developed some innovative approaches to avoid working in the safety area when a runway is active. At airport conferences and seminars for airport operators, this subject should be included in the agenda. This will enable everyone to take advantage of the ideas and practices that have proved to be successful. No airport is an island.

DRIVER TRAINING

HOW IS *YOUR*

COMMUNICATIONS COURSE?

Getting Around the Airport Safely

Training in radio communications, important when Air Traffic Control is involved in aircraft and vehicular movements on the airport surface, is equally important when there is no Air Traffic Control Tower (ATCT) on the airfield. Training in aviation communications procedures is a critical factor in maintaining airport safety. The old saw, if you think safety is expensive, try an accident, makes the investment in driver training all the more worthwhile.

Aviation Terms as an Incentive

The use of aviation terminology can provide an incentive for new hires to take pride in their jobs. Understandably, many of the jobs performed at the airport require minimum skills. In addition, because of the repetitive nature of the work, employees can get complacent and even bored. Inattention and boredom can contribute to accidents. But there are ways to counteract this, and airport management can take steps to minimize the attitudes that lead to complacency and boredom. Often, the people who are asked to perform these jobs will respond to learning how to do their jobs effectively, if attractive incentives are offered.

Airport management can take advantage of a person's interest in aviation by using incentives to obtain good performance. An airport management that treats employees as potential professionals and trains to that level will usually get the kind of performance that ensures safety and makes the airport attractive to the users.

Procedures during Construction

While the use of aviation terminology for communications on the airfield is an important part of the driver training program for airport personnel, it also can be instrumental in assuring safe operations when the airport is engaged in construction activities. Aviation terms and communications procedures for airport construction personnel can be included during the pre-construction briefings. Providing an instructor for this is an investment that can pay dividends. Familiarity with the airfield, use of the access roads and portions of the field affected by construction, and, especially, those areas that are *unavailable* should be part of the safety briefing for truck and equipment operators. A review of the routes that will be designated for truck and equipment operators and the marking or signing that they can expect will prepare these people for driving on the airport. A printed chart, including terms commonly used by ATCT, can help make construction people aware of airport safety needs and the reasons for procedures.

NOTICE

Pilots who get out of their aircraft to take pictures, meet friends, or cross movement area without first obtaining a clearance are causing VPDs in increasing numbers. Airport managers should notify the nearest FSDO and give the pilot's name and aircraft N-number to an inspector so that the pilot can be counseled about

the problem s/he is creating. Airport operators should have signs that caution pilots about requirements for going out to the movement area. The most advantageous places for these signs are in crew lounges, FBO training rooms, and other locations where pilots must enter to reach the airside. There should be no excuse for pilot ignorance.

NOTAMS

Are your NOTAMS current? During construction, taxiing routes change, and other conditions may pose hazards to transient pilots as well as those based at your facility. Check your NOTAMS daily! If one was cancelled by mistake or was supposed to be changed or cancelled, you should know!

Many countries on the International scene are concerned with upcoming deadlines for coming into compliance with ICAO directives and standards for their airports. Since FAA has had an airport certification program for several decades, it is only natural that many of these countries are turning to us for help.

If your airport is contacted by a country seeking a visit or training, please contact your ACSI or your FAA Regional Office. International contact should be made on an official level for these types of assistance.

The USA and the FAA are pleased to be of assistance to those countries that are developing airport certification programs.

RUNWAY INCURSION PREVENTION

The latest measures to raise pilot and vehicle operator awareness on

the movement area are being tested at Green State Airport in Providence, R.I. *Enhanced Surface Markings*, consisting of high visibility holding position markings, a modified taxiway centerline, and surface painted holding position signs were installed in May. They will be there until further notice. Pilot feedback will be collected in July and August. Comments can be directed to:

www.mitrecaasd.org/pvdmakings

The novelty of the marking may make it a winner....at least for a time.

Will the new marking be included in pilot education? The present marking, which gives the same message (STOP HERE UNLESS OR UNTIL YOU HAVE A CLEARANCE TO CROSS!), was not included in the ground schools.

Also, the pilot culture will have to recognize that navigating the surface of the airport is every bit as important as navigating the skies. It means taking your head out of the cockpit, looking where you are and looking where you are going. Below is the Jeppesen Sanderson plate.

JEPPESSEN 25 APR 03 (10-8) PROVIDENCE, RI GREEN STATE

PILOT GUIDE TO ENHANCED SURFACE MARKINGS PROVIDENCE (PVD)

Project Overview

The FAA has initiated a project to investigate applications of enhanced airport surface markings to improve pilot situational awareness in the runway holding position environment. PVD has been chosen as a demonstration site for these enhanced markings. The enhanced surface markings will be implemented on the entire airfield, and application is expected to begin in May 2003 and continue through mid-June 2003. Pilot feedback will be collected during July and August of 2003. Your feedback is needed!! To provide feedback or obtain further information on this project, please visit www.mitrecaasd.org/pvdmakings/.

Description of Enhanced Surface Markings

RUNWAY HOLDING POSITION MARKINGS ON TAXIWAYS: Markings extended onto the shoulder beyond the taxiway edge lines. Also, the dashed portion of the runway holding position marking is painted white to identify runway side of the hold line.

MODIFIED TAXIWAY CENTERLINE: Dashed yellow lines are placed on both sides of taxiway centerline. The modified taxiway centerline will be implemented approximately 150 ft. prior to the runway holding position marking (if sufficient space is available).

SURFACE PAINTED HOLDING POSITION SIGNS: Placed on both sides of the taxiway centerline (if sufficient space is available).

(CONTINUED ON REVERSE SIDE)

Supplied by Jeppesen Sanderson

JEPPESSEN 25 APR 03 (10-8A) PROVIDENCE, RI GREEN STATE

Standard Markings **Standard Markings with Enhancements**

150'

(Graphics not to scale)




FEEDBACK

Your feedback on this surface markings demonstration is needed. Please visit the following website to fill out a short questionnaire:

www.mitrecaasd.org/pvdmakings/

Questionnaires are also available at the operations office of all fixed base operators on the airport as well as the airlines.

You can make a difference.

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Human beings seem capable of rising to the next level of complacency. Will this be the same?